

Subsequent relating cases.....

FORM 9/12



No. 12,321/33.

APPLICATION DATED

24th April, 1933.

Applicant (Actual Inventor) .. .. PHILIPP HENRICH.  
Application and Complete Specification .. Accepted, 10th January, 1934.  
Acceptance Advertised (Sec. 50) .. .. 18th January, 1934.

Class 66.5.

Drawing attached.

#### COMPLETE SPECIFICATION.

#### "Improvements in fuel and like atomizers."

I, PHILIPP HENRICH, of 2, Kaiserstrasse, Frankfurt on Main, Germany, Manufacturer, hereby declare this invention and the manner in which it is to be performed, to be fully described and ascertained in and by the following statement:—

This invention relates to a device for atomizing liquids and consists broadly in the provision of a liquid-supply pipe carrying at its free end a head and having lateral perforations below said head, a funnel being arranged so as to surround the perforated part of the pipe and to co-operate with the head to form, around the circumference of the latter, a narrow discharge slit across which the atomizing air is made to pass.

Means are provided for regulating the size of the slit according to requirements and also for varying the amount of air fed across it.

The arrangement has the advantage that, since the discharge of liquid takes place along an extensive slit at right angles to the atomizing air, a very effective atomization of the liquid will be obtained.

The device is suitable for use as a carburettor in internal combustion engines and as an atomizer and mixer for reduction and oxidation processes; for oil burners; for medical purposes; as well as for moistening and washing purposes.

Fig. 1 of the accompanying drawings represents a vertical section of a device according to the invention constructed as a carburettor for internal combustion engines.

Fig. 2 is an elevation of the device at right angles to Fig. 1, and

Fig. 3 is a plan view of the device.

The illustrated device comprises a casing b connected to the induction pipe of the engine and provided with an air inlet a. The fuel is fed through an upright pipe g which carries at its free upper end a conical head f. Underneath the latter the pipe is provided with a plurality of perforations e, and the perforated portion of the pipe is surrounded by a funnel c the wide end of which is of substantially the same diameter as the base of the cone f and co-operates with the latter for forming a narrow discharge slit for the

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fuel. On a level with this slit the casing b carries an iris diaphragm m whereby an adjustably flow of atomizing air can be made to sweep across the fuel discharge slit.

- 5 The funnel c may be supported in any suitable manner, and means are provided for a relative adjustment of cone and funnel to vary the size of the slit and thus the discharge of fuel therefrom. In the arrangement shown, the funnel is connected to a pipe d which surrounds the pipe g and which is rigidly supported in the casing b. The pipe d is connected to a flanged supporting member q which is supported by means of a spring i in a screw cap r applied to the lower end of the casing. A pipe p connected to the screw cap supplies fuel to the pipe g through the supporting member q. Interposed between the supporting member q and a rigid portion of the casing b is a rotatable collar k which takes the upward thrust of the supporting member and which has, like the latter, a helical bearing surface, so that a rotary adjustment of the collar will cause an axial adjustment of the tube g and head f for regulating the slit. A lever arm l connected to the collar k projects through an elongated slot h in the casing for the adjustment of the collar. The iris diaphragm m is adjustable by means of a lever arm n which projects through a slot o in the casing and the two lever arms may be coupled together for a simultaneous, corresponding regulation of air and fuel supply.
- 35 As a modification of this arrangement, the pipe d may be rendered adjustable instead of the pipe g, or both pipes may be adjustable for regulating the discharge slit. The lever arms l and n may be guided by means of rollers in the slots, and the means for regulating the discharge slit may be varied in other respects to suit special requirements. The diameter of the head f and the funnel c may be varied according to the degree of atomization required. The larger the head the narrower the slit can be for a given rate of feed and the finer will be the atomization. Warm atomizing air may be supplied for heavy liquid, and the air may, for some purposes, be forced instead of sucked through the casing.

Having now fully described and ascertained my said invention and the manner in which it is to be performed, I declare that what I claim is:—

1. A fuel and like atomizer comprising a liquid-supply pipe carrying a head at its free end and having lateral perforations under said head, a funnel surrounding the perforated part of the pipe and co-operating with said head to form, around the circumference of the latter, a narrow discharge slit for the liquid, and means for feeding atomizing air across the slit.

2. A device according to Claim 1 wherein the head and funnel are relatively adjustable for varying the size of the discharge slit.

3. A device according to Claim 1 or 2 wherein the funnel is carried by a pipe which surrounds the liquid-supply pipe, one or both pipes being axially adjustable for the regulation of the discharge slit.

4. A device according to Claim 3 wherein one pipe is connected to a rigid support and the other to a spring-controlled supporting member which bears under the spring action and by means of a helical surface against a helical surface on an adjusting collar, and a lever arm connected to said collar for turning the latter so as to effect an axial adjustment of the pipe.

5. A device according to any of the preceding claims in combination with an iris diaphragm surrounding the head on a level with the discharge slit, and a lever arm for adjusting said diaphragm.

6. A device according to Claim 5 wherein the lever arms of diaphragm and collar are coupled together for a simultaneous adjustment of air and liquid supply.

Dated this twenty-fourth day of April, 1933.

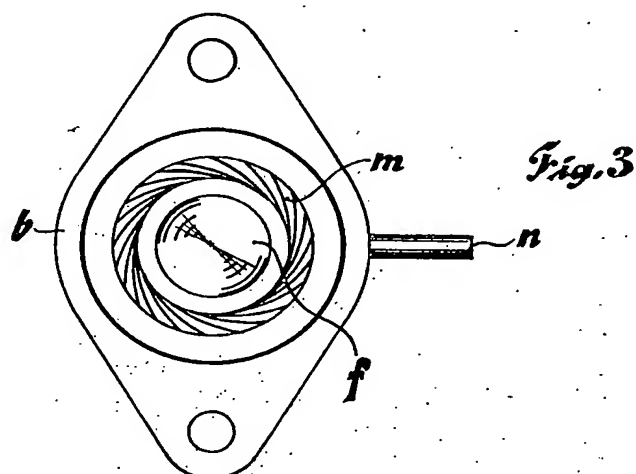
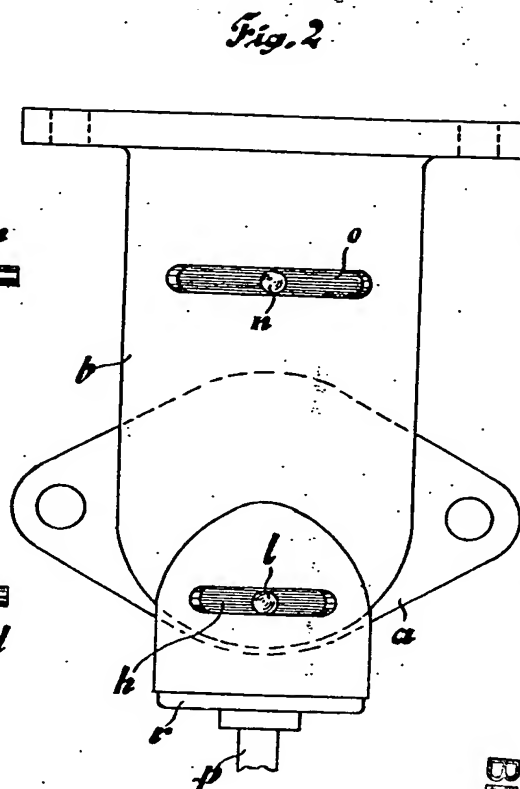
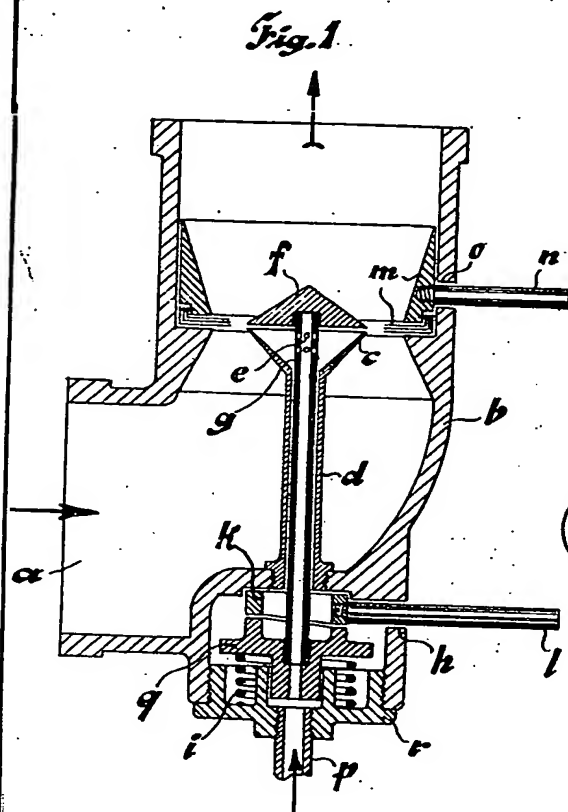
PHILIPP HENRICH,

By his Patent Attorneys,

DAVIES & COLLISON.

Witness—Jean Wigg.

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